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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/005,435

12/03/2001

Shunpei Yamazaki

SEL 132 DIV 1

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7590

04/21/2003

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CHICAGO, IL 60606

EXAMINER

QI, ZHI QIANG

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 04/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/005,435

Applicant(s)

YAMAZAKI ET AL.

Examiner

Mike Qi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-83 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-83 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/329,597.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 36-83 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-81 of U.S. Patent No. 6,384,886 in view of US 6,372,558 (Yamanaka et al).

Claims 36-83 of this application have corresponding limitations with the claims 1-81 of the US patent 6,384,886 except a few wording are different, and having the limitation "forming a body with a textured surface on the pixel electrode by a photolithography".

Concerning claims 36, 43, 50, 57, 64 and 71, having the limitation ""forming a body with a textured surface on the pixel electrode by a photolithography".

However, the limitation "forming a body with a textured surface on the pixel electrode by a photolithography" would have been obvious in view of US 6,372,558 (Yamanaka et al).

Yamanaka discloses (col.16, lines 1-18;Figs.5-6) that in order to obtain reflection characteristics and viewing angle characteristics optimum for the pixel regions, forming an uneven pattern (a body with a texture surface on the pixel electrode) by photolithography would be a basic requirement, so that the reflective liquid crystal display device have both the function to reflect incident light and the function to scatter incident light.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to form a body with a texture surface on the pixel electrode by a photolithography as claimed in the claims 36, 43, 50, 57, 64 and 71 for achieving optimum reflection and viewing angle.

Concerning claims 36-56 of this application claimed a method of manufacturing a display device. Claims 1-81 of the US patent 6,384,886 claimed an active matrix type display device, and the device is produced by the forming method of the claims 36-56.

The subject matter of the claims 36, 43 and 50 of this application, such as forming a body with a textured surface on the pixel electrode, forming a light reflection film on the body with the textured surface, flattening a surface of the light reflection film and the light reflection film has a higher refractive index than the body with the textured surface, is fully covered in the US patent 6,384,886 (for example, the claims 1, 61, 72 of the US patent 6,384,886, such as a body with a textured surface formed on the first electrode, a light reflection film comprising a material having a higher refractive index than that of the body and having a flat surface, the light reflection film formed over the first electrode and the body).

Concerning the limitations of forming a thin film transistor (TFT) over a substrate, forming a pixel electrode connected to the thin film transistor were common and known in the art as the switching element using transistor to control the turn on and off and connected to the pixel electrode for obtaining the image. Such as the US 5,805,252 (Shimada et al) disclosed the liquid crystal display using TFT and the pixel electrode connected to the TFT (see Fig.14).

Concerning claims 43 and 64, the limitation of flattening a surface of the light reflection film by a CMP process was common and known in the art as using the CMP (Chemical Mechanical Polishing) process for achieving high-flatness, mirror-like surface and high reflectance. Such as the US 6,049,132 (Iwahashi et al) disclosed using the CMP method to provide a high-flatness, mirror-like surface (see col.1, lines 43-45).

Concerning claims 78-83, the limitation "the light reflection film is formed by one selected from the group consisting of a sputtering method, a coating method, and a vacuum evaporation method" was a conventional method using sputtering technique to form a light reflector on the body with the texture surface to increase the intensity of light scattered in the direction perpendicular to the display screen. Such as the US 5,805,252 (Shimada et al) discloses (col.2, line 35 – col.3, line 46; Fig.6) that the reflector (50) includes a thin insulating layer (53) and metallic thin film (52) having a roughened surface in which a metallic thin film is formed by using a sputtering technique, and that would have been at least obvious.

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Concerning claims 37-41, 44-48, 51-55, 58-62 and 65-69, the limitations are fully covered in the claims such as claims 65, 69, 62, 70 and 71 of the US patent 6,384,886.

Concerning the claims 42, 49, 56, 63 and 70, all the limitations only given weight as intended use. Any display can be used for those products, and that would have been at least obvious.

Claims 57-77 of this application claimed a method of manufacturing a display device. Claims 1-81 of the US patent 6,384,886 claimed an active matrix type display device, and the device is produced by the forming method of the claims 57-77.

The subject matter of the claims 57-77 of this application, as the explanation above, is fully covered in the US patent 6,384,886 except that forming an insulated gate field effect transistor on a semiconductor substrate.

However, TFT and FET functions as the same switching elements and that was common and known in the art as the dependent on the different application. The prior art of record, such as US 6,307,214 (Ohtani et al) discloses (col.14, lines 19-27) that the switching performance data value is approximately equal to the insulated-gate field effect transistor (IGFET), and US 6,163,055 (Hirakata et al) discloses (col.4, lines 57-61) that the typical semiconductor element is TFT, in addition, the semiconductor element is an IGFET or the like.

Therefore, using IGFET or TFT as a switching element would have been at least an obvious variation.

Concerning the limitation "forming a body with a textured surface on the pixel electrode by a photolithography", Yamanaka discloses (col.16, lines 1-18;Figs.5-6) that in order to obtain reflection characteristics and viewing angle characteristics optimum for the pixel regions, forming an uneven pattern (a body with a texture surface on the pixel electrode) by photolithography would be a basic requirement, so that the reflective liquid crystal display device have both the function to reflect incident light and the function to scatter incident light. Therefore, it would have been obvious to those skilled in the art at the time the invention was made to form a body with a texture surface on the pixel electrode by a photolithography for achieving optimum reflection and viewing angle.

Response to Arguments

3. Applicant's arguments filed on Jul.22, 2002 have been fully considered but they are not persuasive.

Applicant's **only** arguments are as follows:

1) The amended each independent claims "forming a body with a texture surface on the pixel electrode by a photolithography" that does not recite in the US patent 6,384,886.

Examiner's responses to Applicant's **only** arguments are as follows:

1) Concerning the limitation "forming a body with a textured surface on the pixel electrode by a photolithography", Yamanaka discloses (col.16, lines 1-18;Figs.5-6) that in order to obtain reflection characteristics and viewing angle characteristics optimum

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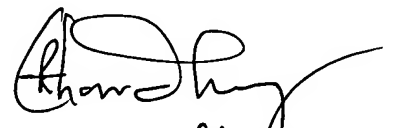
for the pixel regions, forming an uneven pattern (a body with a texture surface on the pixel electrode) by photolithography would be a basic requirement, so that the reflective liquid crystal display device have both the function to reflect incident light and the function to scatter incident light. Therefore, it would have been obvious to those skilled in the art at the time the invention was made to form a body with a texture surface on the pixel electrode by a photolithography for achieving optimum reflection and viewing angle.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (703) 308-6213.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mike Qi
April 8, 2003


T. Chowdhury
Primary Examiner
Tech. Center 2800